

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/264583302>

The Future of China's Rise: How China's Economic Growth Will Shift the Sino-U.S. Balance of Power, 2010–2040

Article in *Asian Politics & Policy* · July 2012

DOI: 10.1111/j.1943-0787.2012.01362.x

CITATIONS

3

READS

1,115

1 author:



Alexander L Vuving

Asia-Pacific Center for Security Studies

27 PUBLICATIONS 134 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Theory of soft power [View project](#)



Evolution of Vietnamese politics [View project](#)

The Future of China's Rise: How China's Economic Growth Will Shift the Sino-U.S. Balance of Power, 2010–2040

Alexander L. Vuving

Asia-Pacific Center for Security Studies, USA

The current debate over China's rise and the future of international primacy is polarized between two prevalent views: one foresees China becoming the world's largest economy and taking over the position of international primacy from the United States, whereas the other believes that the Chinese economy will falter as a result of structural imbalances and China will not become a superpower. Both predictions miss the mark. This study argues that notwithstanding the political will to rebalance the economy, China will continue to follow an investment-intensive growth path, and despite the structural imbalances, this path will still be able to lead to Chinese economic primacy. But sheer economic size is not a good indicator of hard power. Using an organic combination of wealth and productivity as an indicator of hard power, the article shows how close the power competition between China and the United States will likely be and that Beijing may not be able to surpass Washington as a superpower.

Key words: China's economic growth, high-technology GDP, power transition, rise of China, U.S. primacy

Introduction

Few would dispute that relative capabilities are one of the most important parameters of international politics. The idea would find much resonance with a wide spectrum of scholars and practitioners, from those of ancient Greek history to those of Chinese politics and from those of the realist school of international relations to those of communist thought. "The growth of the power of Athens, and the alarm which this inspired in Lacedaemon, made war inevitable," wrote Thucydides (*History of the Peloponnesian War*, I.1.23), the great Greek historian, about the "real cause" of the Peloponnesian War. Central to the strategic

The views expressed here are my own and do not necessarily reflect those of the Asia-Pacific Center for Security Studies and the U.S. government.

culture of China throughout ancient and modern history is a rational calculus based on the comparison of relative capabilities (Johnston, 1995, 1996; Scobell, 2003). "The most important factor for the process of international political change is," noted Robert Gilpin (1981), a leading realist of the modern times, "the differential or uneven growth of power among states" (p. 93). And the "correlation of forces," the Soviet approximation of the "balance of power," was the starting point of any strategic consideration for those trained in the communist school of thought (Garthoff, 1951).

Notably but not surprisingly, the uneven growth of power among states and the ensuing change in power positions are the central motive and concern driving both the economic development of China and the rise of Chinese power and the related debates over China's rise, U.S. decline, and the future of international primacy. Asked by David Lampton (2001, p. xi) "why her father, when given the choice between slower economic growth and almost dangerously rapid expansion, invariably chose the latter," a daughter of Deng Xiaoping, the paramount leader of China and the architect of its policy in the late 20th century, responded:

In the mid-1970s, my father looked around China's periphery, to the small dragon economies [Singapore, Hong Kong, Taiwan, and South Korea]. They were growing at eight to ten percent per year and these economies had a considerable technological lead over China. If we were to surpass them and resume our rightful place in the region and ultimately the world, China would have to grow faster than them.

The steady and rapid expansion of Chinese power, coupled with the financial and debt crises in the United States, has sparked a lively debate about the rise of China, the decline of the United States, and the future of global primacy and regional primacy in Asia.¹

This debate is polarized between two prevalent opposing views. One view anticipates that China will surpass the United States as the world's largest economy and take over the position of international primacy from the latter. This view has inspired, for example, a globally best-selling book, Martin Jacques's *When China Rules the World* (2009), and a debate-provoking essay titled "Power Shift: Australia's Future Between Washington and Beijing" by Hugh White (2010), a former deputy secretary for strategy and intelligence in Australia's Department of Defense. The opposing view believes that given the cracks and imbalances in China's economy, there is no reason to talk about China as a new superpower. It argues that a multitude of mounting structural problems will cause a severe downturn in China's growth and, as a result, in the words of Gordon Chang (2011), a prominent advocate of the "China collapse" thesis, "we will witness either a crash or, more probably, a Japanese-style multi-decade decline."

There are fundamental flaws in both predictions. The former too readily equates economic heft with power despite the fact that the two are not only conceptually distinct but also practically distant. For sheer economic size does not make a superpower. Britain was commonly seen as the most powerful country in the 19th century even though its economy was smaller than China's and Russia's in the first half and smaller than that of the United States in the second half of the century. The latter anticipation too readily equates a downturn in economic growth with collapse and forgets that even if China eventually experiences

multiple “lost decades” in which the growth rates are very low, it may take decades for the Chinese economy to decelerate from the current 10–11% range (in terms of five-year moving average growth rate) to a 1–2% range, and these decades of deceleration may still be sufficient for China to become a new superpower. The Japanese economy, the quintessential embodiment of a multidecade stagnation, needed slightly more than two decades (from 1970 to 1992) to travel from its high-growth phase (over 9%) to the low-growth period (under 2%).

What is the future of China's rise? Will China become a new superpower? Will U.S. hard power be surpassed by China's? This article tries to answer these questions. In the next section, I define *superpower* as “superior hard power” and develop a single indicator of a state's relative hard power. This indicator is an organic combination of aggregate wealth and productivity, expressed by “high-technology gross domestic product (GDP),” the output of the knowledge-intensive and high-technology manufacturing industries in an economy. In the third and fourth sections that follow, I examine the sources and structures of Chinese growth in order to forecast the future of China's economic development. I argue that notwithstanding the political will to rebalance the economy, China will continue to follow an investment-intensive growth path. However, contrary to a prevalent belief that this path will soon lead to either a collapse or multidecade stagnation, my examination of China's growth prospects suggests that although China will likely experience a multidecade decline eventually, it will enter its “lost decades” not earlier than the 2030s. In the coming 20 years, China will have a great chance to overtake the United States as the world's largest economy. The chance for China's hard power to surpass America's is much smaller, but the race will likely be extremely close. These conclusions are drawn from some scenarios about the balance of hard power among the top powers in the Asia-Pacific region for the 2010–2040 period, which will be presented in the fifth section.

Defining Superpower and Measuring Hard Power

A great power is commonly defined as one that is capable of holding its own against any other state. This capability is in practice the state's military and economic power (Kennedy, 1987). A superpower, then, is a state that is far ahead of most other states in terms of military and economic power. Using Joseph Nye's (1990, 2011) concept of hard power as a common term for military and economic power, we can explain superpower as “superior hard power.”

The main purpose of this analysis is to assess the Sino-U.S. balance of hard power. This assessment involves measuring relative power. A major criticism with regard to measuring power says that what is measured is actually resources, not power. However, as Keith Dowding (2008) argues, power is reducible to its resources when measured relatively.² Thus, the assessment of the balance of hard power among states is reducible to the assessment of the resources of their military and economic power.

If measured separately, military power and economic power do not necessarily add up to hard power. A country's economic power and military power are commonly measured in terms of its GDP and military expenditures, respectively. But one may not see a state's hard power when looking at its GDP and military expenditures. For example, when Britain was at the peak of its global primacy

around 1870, it ranked third behind the United States and Russia in GDP and third behind Russia and France in military expenditures. To get a better sense of Britain's relative power, one would rather look at the more limited domains of manufacturing, trade, finance, and naval power, where Britain was first (Nye, 1990, p. 39; Russett, 1985, p. 212).

To approximately measure relative hard power, I propose using a single indicator to measure an organic combination of the aggregate resources of economic and military power. This indicator is the output of the knowledge-intensive services and high-technology manufacturing industries on a value-added basis. It provides a simple, approximate, and thus useful index of the knowledge-intensive and high-tech-generated portion of total economic output (hereafter "high-tech GDP"), which expresses in an organic way the actual combination of wealth, innovation, and productivity in the economy. Wealth and innovation (or productivity, for that matter) are often singled out as the key factors generating states' hard power. Major analyses of hegemonic conflict suggest that wealth and innovation are the critical resources of military effectiveness (Tellis, Bially, Layne, & McPherson, 2000, ch. 4), whereas economic studies unequivocally agree that capital and productivity (also identified as innovation or technology) are the principal sources of economic growth. A state's hard power comes from a combination of wealth and productivity (which can be called "productive wealth"), not from wealth alone or productivity alone. China in the 19th century, despite being the world's largest economy, was no match for Britain. Taiwan today, despite having higher productivity than China, is no match for China. But the strongest military force, the most profuse economic and financial capacity, and the most effective structural power are derivable from some combination of large wealth and high productivity.

A single indicator is more useful, is more manageable, and may even be more accurate than a complex set of multiple indicators. The last decades have seen several efforts to create an ever better index of national power. The major results include the Chinese indexes of "comprehensive national power" and the U.S. RAND "indicators of national power" (see Pillsbury, 2000, ch. 3; Tellis et al., 2000; Treverton & Jones, 2005). Heavily weighted toward military and economic power (Edelman, 2010, p. 32; Hu & Men, 2002, pp. 2–3), they share in their double quest for accuracy and comprehensiveness the same tendency to include ever more indicators. Each of these systems consists of a large number of major areas subdivided into an even larger number of indicators. For example, the index system created by the Chinese Academy of Social Sciences includes eight general factors and 64 indicators (Pillsbury, 2000, pp. 219–222). The RAND index also comprises eight major factors represented by more than 40 indicators (Tellis et al., 2000, pp. 179–182). This inflation of indicators has led to the situation where the relationships among them become either unmanageable or imprecisely determined.

A single organic indicator also measures relative power more accurately than a two-indicator system. If a state's hard power results from a combination of wealth and productivity, a conventional way to measure it by using a two-indicator system would be to multiply GDP (which measures wealth) by per capita income (which measures productivity). However, this mechanical formula both exaggerates massively the differences among states and ignores the way

wealth and productivity are actually combined in a given economy. Moreover, since the whole is different from the sum of its parts, a single organic indicator is in principle more accurate in measuring the whole than a system of multiple indicators measuring its individual components. The output of the knowledge-intensive and high-technology sector (high-tech GDP) may, therefore, be a better indicator of productive wealth and hard power than any combination of GDP and per capita income or any combination of GDP and military expenditures.

In this study, high-tech GDP will be assessed by forecasting GDP and the share of the knowledge-intensive services and high-technology manufacturing industries in it. GDP is the best available indicator of a state's aggregate wealth. There are different ways to compute a state's GDP, the most common being in terms of market exchange rates (MER) and purchasing power parity (PPP). For the United States, its GDP in MER terms is normally identical with its GDP in PPP terms because its domestic currency is the benchmark currency in both cases. For China, however, not only is its GDP in MER terms different from its GDP in PPP terms, but also the gap between the two is huge. Thus, it is consequential which way is used to assess China's GDP. If the purpose of the assessment is to know what amount of goods people in China can buy in their domestic markets, GDP in PPP terms would be a better indicator. But for the purpose of comparing states' international power, GDP in MER basis is more suitable while GDP in PPP terms is a poor indicator. This study adopts the Organisation for Economic Co-operation and Development (OECD) classifications of the knowledge-intensive services and high-technology manufacturing industries. The classifications are both well grounded and followed by the data available. According to the OECD classifications, knowledge-intensive services include education, health, business, financial, and communications services, whereas high-technology manufacturing industries include aerospace, communications and semiconductors, computers and office machinery, pharmaceuticals, and scientific instruments and measuring equipment.

The Sources of Chinese Growth

China's economy grew nearly 10% a year on average throughout the last 34 years. Such a long period of very high growth in a large country is unprecedented in world history. As a comparison, Japan's high growth period lasted only two decades, from the early 1950s to the early 1970s. South Korea's takeoff stage lasted for 34 years, from 1963 until 1996, with an average annual rate of 8.3%.³ What are the sources of China's stellar economic expansion? To understand a country's economic growth, economists typically decompose the supply and demand sides of the economy. On the supply side, growth can be achieved by (1) adding more labor, (2) adding more capital, and (3) enhancing efficiency or productivity. The latter is defined as output per unit of input and usually known as "total factor productivity" (TFP). On the demand side, growth is dependent on private consumption, government expenditures, investment, and exports. There are three ways to generate growth on the demand side: (1) by boosting investment, (2) by boosting exports, and (3) by boosting consumption. This framework is not the best or the most comprehensive, but it is a useful starting point. Examining the development of these sources will help shed light on the prospects of growth.

Dwight Perkins and Thomas Rawski (2008) have measured the supply-side sources of China's GDP growth between 1952 and 2005 in order to forecast its development. Their historical data reveal that China's GDP growth in the reform period is driven mostly by fixed capital formation and TFP and only marginally by labor, which is computed as education-enhanced labor hours. The contribution of labor growth to GDP growth decreased from 50% between 1957 and 1965 to 36.9% between 1965 and 1978. In the reform era, education-enhanced labor growth accounted for 24.2% of GDP growth in the period 1978–1990 and only 10.8% in the period 1990–2005. Fixed capital formation consistently played a key role in boosting China's GDP growth. It was the dominant source of growth in the pre-reform era, as both the growth of TFP and its contribution to GDP growth were negative from the Great Leap Forward (1958–1961) until the end of the Cultural Revolution (1966–1976). The contribution of capital formation to GDP growth in the period 1978–2005 is 43.0%, while the share of TFP in the same period is 40.4%. These numbers raise the question, why is China able to maintain such high rates of capital formation and TFP for such a long time?

The motive force of China's capital formation is a "cult of investment," which explains why the People's Republic persistently poured huge amounts of capital into the economy. According to Perkins and Rawski's estimates (2008, p. 839), the growth of China's capital stock averaged 5.8% a year between 1952 and 1978 and 9.6% a year between 1978 and 2005. Data of the Chinese National Bureau of Statistics exhibit a long-term trend of ever rising shares of gross fixed investment in GDP throughout the six decades of the People's Republic. During the same period, India was also able to keep its investment ratio rising, but its growth rate is dwarfed by China's. India started at about 10% in the early 1950s and reached 25% in the mid-2000s. By contrast, China also started at about 10% in the early 1950s, but in the mid-1970s it had already reached the 25% range, and in the mid-2000s its level was 40%. South Korea, the country with the highest historical investment rates among the Asian Tigers, was also able to maintain a high and growing investment ratio, but the upward trend lasted for only four decades and the share exceeded 33% for only one decade. In China's case, investment has remained higher than 33% of GDP for more than three decades now, and it does not seem likely to fall under 33% any time soon.

How is this "cult of investment" possible? I return to this question later in this section, but suffice it to say here that China's near addiction to investment is underpinned by its robust domestic savings, and there is a high propensity to save by all sectors of the Chinese economy—the household, the corporate, and the government. In the pre-reform era, the rate of investment was an administrative decision that was realized by the government's ability to generate a high savings rate mainly through high monopoly profits in industry (Perkins & Rawski, 2008, pp. 845–848). In the reform era, the high rate of investment has stemmed mostly from huge savings on the part of private households, retained profits of enterprises, and, since the late 2000s, also from government savings (Hung & Qian, 2010; Ma & Yi, 2010; Yang, Zhang, & Zhou, 2011). Although China has become a top destination of foreign direct investment (FDI), this external source never exceeded 18% of China's total fixed investment. The share of FDI inflows in China's total fixed investment started to surge in 1992, peaking at

17.1% in 1994 and gradually decreasing to 7% in the mid-2000s (Brødsgaard, 2008, p. 57).

How much of growth is owed to capital accumulation and how much to productivity growth is the subject of much debate. The controversy is due in large part to the elusive nature of the concept of TFP and the way capital is measured. The conventional wisdom, based on the work of Robert Solow (1957), equates TFP with technology. But more often than not, technology is already embodied in tangible assets. For example, when an economy employs new machines using better technologies, part of the effect of the technological enhancement these new machines bring in is accounted for under capital formation. By the same token, labor in the aforementioned estimates by Perkins and Rawski (2008) is adjusted to its education but does not reflect its technological nature (e.g., whether it is employed in agriculture or industry) and human capital in the sense of expertise, creativity, and organization skills. The latter are therefore captured in TFP. But if we do not have data about the workforce's education, this quality of labor will be reflected in TFP (cf., Perkins & Sabin, 2001, pp. 156–157). The fact that several sources of productivity, for example, human capital and technology, can be captured in either TFP or labor and capital is responsible for much variation in estimates of TFP, capital, and labor. It also feeds an unsolved dilemma underlying the debate between those who think that productivity is the key to growth in the long term (e.g., Paul Krugman) and those who argue that investment in fixed assets is more important (e.g., Dale Jorgenson). TFP is, as Moses Abramovitz (1956, p. 11) famously characterized, a "measure of our ignorance." It is, in effect, the measure of those causes of economic growth that we fail to measure rather than the measure of productivity *per se*. Writing in the 1950s, Abramovitz suggested that those sources of growth might include what we now call technological progress, human capital formation, and the effects of economies of scale. "Technological progress comes from innovations—new products, new processes and new markets that allow us to satisfy our material wants in ways that had never been thought of" (Howitt, 2004, p. 4). Productivity is, after all, a function of many things, including, but not limited to, the quality of inputs, the way the inputs are combined, and the larger circumstances of production.

Given these insights, it is safe to say that the major channels through which China's productivity has been improved in the last three decades are two structural changes and two openings. The first structural change occurred with the migration from the countryside to the cities, which transformed hundreds of millions of former farmers into industrial workers. The second transformation is the reallocation of labor and other resources from state-owned enterprises (SOEs) to public-private hybrids and nonstate companies.⁴ Working under harder budget constraints while freer in making decisions, the latter generally outperform SOEs in productivity (Brandt, Hsieh, & Zhu, 2008; Perkins, 2007, pp. 16–17). China's opening up to the world market since 1979 has made it a part of the international division of labor and exposed its firms to the discipline of greater market forces. The participation in a larger market, the division of labor, and the discipline of market forces are known to have a positive impact on productivity and growth. Another source of China's productivity growth comes from the opening of the economy to FDI, which brings in new technologies, management skills, business practices, access to foreign markets, and other intangible assets.

The role of FDI in technology transfer and market access is reflected in the fact that by the mid-2000s, foreign-invested enterprises accounted for nearly 60% of China's foreign trade and almost 90% of China's high-tech-related exports (Brødsgaard, 2008, pp. 57–59). Besides, the Chinese government pursues an aggressive policy of technology promotion. It creates ample incentives for technology transfer and research and development (R&D) on Chinese soil. Foreign investors in high-tech industries are given preferential treatment. The government directs huge amounts of resources into selected industries that are high-tech-based and innovation-intensive, such as information technology, computer science, new materials, alternative energy, nanotechnology, biotechnology, aerospace, and oceanography. Illustrative of China's aggressive R&D policy are the 863 and 973 programs, named after the time of their launch, March 1986 and March 1997, respectively, in which the government supports innovative research in themes determined by experts (Lin & Zhang, 2008, pp. 74–75).

Some "secrets" to China's long boom can be discerned by examining the trajectories at both the macro- and micro-levels of China's political economy. These trajectories reveal that China's reform era has not been a gradual transition process as widely believed, but instead, it consists of two distinct periods where the turning point occurred between 1989 and 1990, probably as a response to the 1989 Tiananmen unrest (Huang, 2008, pp. 40–41). The difference between the two periods can be seen in several statistical indicators, reflecting two different growth models. Huang's (2008, p. 254) careful estimates show two opposite patterns of household income growth in the two periods. While per capita household income grew faster than GDP per capita during 1979–1988, the reverse is true for the post-1989 period. It is remarkable that the share of indigenous private investment (i.e., excluding FDI) in the total fixed asset investment peaked in the 1980s, not a later period. It soared from a negligible level in the pre-reform period to 21.4% in the 1981–1989 period, then slightly declined to 19.8% during 1990–1992, plunged to 13.3% in the 1993–2001 period, and only marginally increased to 14.7% between 2002 and 2005 (Huang, 2008, p. 21).⁵ The defining character of China's economic development in the 1980s is that it was driven primarily by rural entrepreneurship. After 1989, many trends of the 1980s were reversed and state capitalism emerged as the principal driver of growth (Huang, 2008).

Placed in the context of a longer historical evolution, however, the post-1989 period represents the return to a longer trend, whereas the 1980s prove to be an interlude. A long-term trend in China's economic development is the rise of investment relative to GDP. Contrary to this trend, between 1980 and 1990, the share of fixed capital formation in GDP (calculated in constant 2000 prices, not current prices) declined by more than 15 percentage points, breaking for a decade the long-term trend of rising investment rates (see chart in Perkins & Rawski, 2008, p. 843). The decade-long decline was reversed in 1990, and since then the investment rate has risen to new heights. In the late 2000s, it surged to nearly 50%, a record figure by international standards. As a comparison, the historical peak of Japan's investment rate (reached in 1973) is 36.4% of GDP, that of South Korea (1991) 38.0%, and that of Thailand (1991) 41.6% (Fukumoto & Muto, 2011, p. 4). Another long-term trend in the Chinese economy is the decline of the consumption ratio. This does not mean that consumption did not rise. Household and government consumption grew in absolute terms, but while government

expenditures largely kept pace with GDP growth, household consumption rose far more slowly than GDP, resulting in a decline of its share in GDP. From over 60% of GDP in the early 1950s, household consumption fell to around 50% in the late 1970s, only to further drop to the 35% range in the late 2000s. By contrast, Japanese personal consumption never fell under 50% of GDP. Also, South Korea's and Taiwan's private consumption reached the lowest historical point at 49.1 and 47.2% in 1988 and 1986, respectively (Fukumoto & Muto, 2011, p. 4). China has sacrificed personal consumption in pursuit of the cult of investment, and this is a principal feature of China's approach to economic development.

Why did the same approach of raising investment and repressing consumption lead to a very moderate growth rate (4.5% a year) in the pre-reform times but to a very high rate (10%) in the reform period? We have seen above that structural changes and open-door policies have tremendously improved the efficiency of investment. The impact of international opening cannot be overstated. While domestic consumption is heavily repressed, investment and exports remain the pillars of China's growth in the post-1989 era. Throughout the three decades before the introduction of reform in 1978, China's exports hovered at around 4% of GDP. Starting from 1979, it increased steadily relative to the rapidly rising GDP, reaching the 20% range within two decades. After China acceded to the World Trade Organization in 2001, its exports rocketed to the 40% range of GDP in just a few years. China's super-high growth is probably due in part to its ability to maintain super-high investment and super-low consumption.

The Structure of Chinese Growth

The contrast and extremities in China's rates of investment and consumption suggest that its extraordinary growth sits on imbalances. The imbalances were recognized as early as the 1990s, when it was said that "the Chinese economy has been pulled by two strong horses (fixed investment and exports) and one weak donkey (domestic consumption)" (Lee, 2009, p. 95). The need for "correcting imbalances" was expressed in the concept of "harmonious development," which was one of China's central slogans in the 2000s. The idea of rebalancing was promoted by no less a figure than President Hu Jintao and Premier Wen Jiabao. In his speech at the Boao Forum in April 2011, Hu declared:

In the next five years, China will make great efforts to implement the strategy of boosting domestic demand, especially consumer demand and put in place an effective mechanism to unleash consumption potential. We will ensure that consumption, investment and export contribute to economic growth in coordinated ways.

A month earlier, China's National People's Congress approved a new national development plan for the period 2011–2015, the 12th Five-Year Plan, which emphasized "higher quality" and "inclusive growth" and set out initiatives to promote consumption over investment and exports and to slow down annual GDP growth to 7% over the next five years (APCO Worldwide, 2010; KPMG China, 2011).

While this plan was praised as "a watershed event in the development of modern China" (Roach, 2011, p. 1) and "a turning point from the country's

previous emphasis on headline growth" (KPMG China, 2011, p. 1), it is worth noting that similar targets with an annual GDP growth rate of 7.5% were already set in the 11th Five-Year Plan and praises such as "revolutionary," "a watershed," and "of turning point significance" were already used to describe that previous plan (Fan, 2006). In his Work Report to the National People's Congress in March 2006, Premier Wen Jiabao acknowledged that "slow change in the pattern of economic growth" and "imbalance between investment and consumption" were among the "main problems" in China's economic development and stressed that the Chinese government needs "to work hard to solve all these problems" (Wen, 2006). Yet the result after years of the government's hard work was the deepening of those problems. China's investment rate surged from the 40% range at the beginning of the 11th Five-Year Plan to the vicinity of 50% at the end of the period. During the same time, the consumption ratio plunged from 40% of GDP to a few percentage points over 30, while annual GDP growth rates remained over 9%. Why did the old tendencies continue to hold sway even despite political will from the top leadership?

In general, strong incentives for investment continued to exist in the form of cheap costs of labor, capital, and technology. Workers' wages were subdued by the unlimited supply of labor from the countryside. Bank lending rates, which reflect the cost of capital, were kept significantly lower than the rates of return on capital (Fukumoto & Muto, 2011). Intellectual property rights were poorly enforced while the government aggressively subsidized technology enhancement. While these cheap costs encouraged more investment, they and China's low currency exchange rates ensured that Chinese products are price competitive in the world market. Raising these costs to cool down investment, especially in times of crises such as the 2008 Wenchuan earthquake and the global recession, is not what the Chinese government wants to pursue. While imbalances are threatening China's sustainable development, high growth remains the most effective way to satisfy its more immediate needs, which range from maintaining international competitiveness to preventing social unrest. This dilemma is described by David Beim (2011) as "a timing problem: raising wages will impact export competitiveness immediately, but the benefit of wealthier consumers buying more may take many years to evolve. The old model must be disadvantaged well before the new model can take hold" (p. 11).

In addition to the cost and timing problems, there are two political constellations that ensure that any efforts to rebalance the Chinese economy will hit a brick wall. The first concerns the local governments, where half of its revenue stems from price difference in land transfer, as land in China is state property ("Land Transfers," 2010). It is thus in the core interests of local governments to promote the volume rather than the quality of investment. The second constellation involves the SOEs, through which the state exercises control of the economy. The Chinese government has made clear that the state must have "absolute control" in key industries deemed to be essential to national security and the economic lifeline of China. These critical industries include finance, media, energy, telecommunication, and transportation, among others. The government's view is, as State Assets Supervision and Administration Commission Chairman Li Rongrong clarified, that "central SOEs should become heavyweights" and "state capital should play a leading role" in these sectors. He declared, "In these sectors,

State-owned assets should expand in volume and optimize in structure, and some key enterprises should grow into leading world businesses” (Zhao H., 2006). A perennial problem with SOEs is, however, their inherent inefficiency that results from their role as a political tool of the state, their monopolistic position in some sectors, and their public ownership. In any case, the state-controlled banks have to pour huge monies into the SOEs, either to expand the profitable firms or to bail out the loss-making ones. In addition to this propensity, there exists at the local level an intricate relationship that favors extending loans to SOEs on a policy or even personal rather than commercial basis. One report describes it thus:

Local officials have enormous leverage over the banks, because they administratively supervise the local branches of the state banks, they negotiate with the central bank over the amount of loan quota the local banks can lend, they decide how much of the existing loans to the local SOEs are to be repaid, and they are in a position to assist the banks in such matters as hiring, housing, and education of bank employees' children. (Wolf, Yeh, Zycher, Eberstadt, & Lee, 2003, pp. 126–127)

Given the “propensity of things” as described above, China's investment-driven and export-led growth model was not and will not be changed by mere political will or policy guidance. Only a recession or stagnation period can effectively remove the conditions for existence of the current model. Scholars and pundits have listed a variety of possible triggers for an end to Chinese economic growth: social unrest, a global recession, or a demographic, environmental, public health, energy, or banking crisis. Next, I will examine each of these possible triggers in more detail.

China experienced large-scale social unrest in 1989 with the Tiananmen Square turmoil, which caused the economy to grow slowly, about 4% annually, for two years. But possible large-scale social unrest of the 2010s will not be like the protests of 1989, which were primarily a student movement. The post-1989 regime has largely co-opted the urban middle class and the young students, as growth was focused on urban development (Huang, 2008), education on nationalism (Gries, 2004; Hughes, 2006; Zhao S., 2004), and ideology on the elites, which found expression in the “Three Represents” Theory. Protests against land grabs will increasingly become a nationwide phenomenon but remain short of a national movement due to their localized nature. Large-scale social unrest in the 2010s, should such occur, will likely be triggered by migrant workers, whose numbers are in the hundreds of millions, and then spread to their relatives in the countryside. However, as Chinese society has been atomized by Communist Party rule for more than six decades now, such social unrest is likely to be limited within an ethnic or provincial community and can spread to no more than a few provinces. If occurring before the natural end of China's high-growth phase, such turmoil should not result in the ruling elites discarding the existing growth model altogether.

A prolonged global recession would slow down China's growth by slashing foreign demand for a long period, but the global recession since 2008 shows that as long as China can keep its products price competitive, it can overcome the downturn. China's ability to produce extremely cheap consumer products is likely to last until its surplus labor supply dries up and workers' wages rise

extensively. (I will return to this issue when discussing the demographic crisis.) While an energy quandary the size and intensity of the 1973 oil crisis is likely to cause a recession in China, experiences of the two Gulf Wars and numerous crises in the Middle East since the late 1980s suggest that such a crisis is not highly probable in the near future. With regard to public health and environmental problems, careful estimates by Perkins and Rawski (2008, pp. 870–876) suggest that they are unlikely to pose fundamental obstacles to China's growth in the next two decades.

China's banking system is overburdened with debts and nonperforming loans (NPLs) of the state firms and local governments. Based on official numbers, Victor Shih (2011) estimates that local government debt in China lies between 38 and 51% of GDP. How inefficient the SOEs are is reflected in the fact that while they use about 75% of total investment capital, they produce only 25% of total outputs. In the period 2001–2004, about 40% of loans issued ended up being classified as nonperforming. As recently as 2006, international accounting firm Ernst & Young estimated total NPLs in the financial system to be about 40% of GDP, compared with 5% in India and under 3% in both Japan and Indonesia (Lee, 2009, pp. 89, 68). It is no surprise that leaders of large state banks tend to be advocates of rebalancing, whereas others, including the Ministry of Commerce, the National Development and Reform Commission, and the powerful "Shanghai Clique," who represent the interests of the SOEs, are against the change (Aglietta, 2011; Sender & Anderlini, 2010). The main reason that China's banks can bear a large mountain of debt lies in the fact that they sit at the same time on a large mountain of savings. China's savings rate is extremely high by both international standards and historical experience. As a percentage of GDP, its gross national savings are higher than those of Japan and Korea throughout their high-growth period. Discounted by gross capital formation, China's savings rate was negative within 5% of GDP during the first 17 years of the reform era, but it has been positive since 1996 and surged to more than 5% of GDP since 2005 (Ma & Yi, 2010, pp. 5–6). The causes of China's high savings are complex, but the combined insight from numerous studies suggests that it has resulted from an intricate interplay of China's strong economic growth and its specific demographic profiles, which are shaped to a considerable extent by the one-child policy, with the "cult of investment" acting behind the scenes (cf., Chamon, Liu, & Prasad, 2011; Hung & Qian, 2010; Kuijs, 2006; Ma & Yi, 2010; Wei & Zhang, 2009; Yang, Zhang & Zhou, 2011). This implies that China's savings will subside when an economic slowdown sets in and the ratio of nonworking population becomes substantially high. China's demographic projections suggest that this ratio will become too high to support a high savings rate only in the 2030s. On the other hand, as will be seen in the following discussion, China is likely to enter a systemic slowdown period one decade earlier, in the 2020s. In other words, a collapse of China's banking system may be likely in the far future, but it is unlikely to occur before the country reaches the "natural" end of its takeoff stage.

Demographic shifts can adversely affect economic growth in a number of ways. As concerns China's future, two demographic changes stand out as major obstacles to growth. First, growth will be curbed when a shrinking working population lives alongside a growing retired population. This situation is expected to take place in China beginning from 2013 (Cai & Wang, 2010), but the

time point when it will start having a major impact on growth, by relatively reducing the productive workforce and savings, ranges from the late 2010s to the early 2030s (Eberstadt, 2009; Perkins & Rawski, 2008, pp. 847–848). Second, when the pool of surplus labor from the rural areas dries up, wages will rise immensely. The rising costs of labor will make the country's products less price competitive, leading to a systemic slowdown in economic growth. Many countries, including Japan, Korea, and Taiwan, have experienced such a change, known as the Lewis turning point. This turning point is actually stretched to a period, from the first turning point when the growth of labor demand exceeds the growth of labor supply to the second when wages in both the agricultural and manufacturing sectors are determined by their respective marginal productivities of labor (Lewis, 1972). Many commentators in the debate over "the end of cheap Chinese labor" have not paid due attention to these details, causing unnecessary controversy (cf., "Is the Era," 2010). More careful studies suggest that China has already crossed into the Lewis turning period, with the first point occurring in 2004 (Ba Shusong, quoted in Reuters, 2011; Cai, 2010; Cai & Wang, 2011; Garnaut, 2010; Zhang, Yang, & Wang, 2010). In the growth history of Japan, Korea, and Taiwan, all three economies experienced a systemic slowdown in the second decade after the first Lewis turning point. In the case of China, its gigantic and fragmented labor market and its *hukou* (household registration) system may stretch its Lewis turning period longer than international standards, but on the other hand, they will let the wage effects come earlier. Ross Garnaut and Yiping Huang (2006) suggest that the Chinese economy would be structurally transformed as a result of the Lewis turning point by 2020.

China's high-growth phase will come to its "natural" end when the cost advantages of cheap labor, cheap capital, and cheap technology largely disappear. This occurs when the process of catching up to advanced foreign technology is virtually complete, urbanization draws to a close, and the effect of the Lewis turning point reaches a critical mass. These processes do not necessarily reach their endpoint at the same time, but they usually come together. Perkins and Rawski (2008, p. 856) notice that the high-growth period in Japan, Taiwan, and South Korea all eventually ended after two or three decades, and the "slowdown came at a similar level of per capita income, remarkably similar when GDP per capita is calculated in purchasing power parity (PPP) terms and converted into prices of a comparable year." When these economies' per capita GDP passed US\$13,000 in constant 2005 prices, "the GDP growth rate in the years that followed dropped and did not recover to the levels of the previous decades for even one year" (Perkins & Rawski, 2008, p. 857). It is quite reasonable to think that \$13,000 (or a neighboring level) marks the end of the era of cheap costs. According to the World Bank's World Development Indicators, China's GDP per capita in PPP terms in constant 2005 prices was \$6,816 in 2010 and had grown at an annual rate of 10.32% between 2002 and 2010. China's GDP in market prices during the same period exhibited a real growth rate of 10.78% per year. If these figures are reliable and if China will grow at an average rate of 8.5–9.5% a year between 2010 and the end of its high-growth phase (i.e., one to two percentage points slower than in the preceding decades), China's "watershed year," when the country passes the \$13,000 level, will be 2018. If China's growth rates in the 2010s are 7% per year, it will reach the end of the takeoff phase in 2020. These estimates are plausible,

given that they are consistent with the estimates based on the Lewis turning point and the previous experiences of Japan, Taiwan, and Korea.

In sum, none of the possible triggers is likely to affect China in the short term. China is likely to continue its investment-driven and export-led growth model and grow at a high rate above 8% annually for several years until it reaches the natural end of its takeoff stage. The endpoint of China's high growth will probably come in the decade between 2015 and 2025, most likely between 2017 and 2020. The post-high-growth period will witness a systemic slowdown. Given China's extreme imbalances, the growth rates will likely drop precipitously to 4–6% a year on average in the decade that follows the watershed year. GDP growth in the post-high-growth period will be driven primarily by capital formation, as TFP will further drop and labor growth will be marginal. The fall of TFP will result from the cumulative NPLs and the inefficiency of SOEs, among others. China will try to resist this trend with more investment and an aggressive innovation policy, but this will be increasingly harder to achieve. As late as the 2030s, these measures will reach their limits, as a rapidly aging society can no longer save too much to sacrifice to the cult of investment. Trapped in the structural imbalances of the previous periods, China will likely enter one or more "lost decades," when the average growth rate falls under 3% per year.

Scenarios of the Balance of Hard Power in Asia

The United States, China, Japan, and India are the greatest powers that have a large stake in strategic Asia.⁶ They will remain the major powers in the balance of power relevant to Asian primacy in the coming decades. Scenarios of the balance of hard power in Asia can be projected using predictions about the GDP and the high-tech sector's share in GDP of each of these four countries.

In the base scenario, China is expected to grow at an average annual rate of 9% until 2018, when it reaches the end of its high-growth phase. This will be followed by a slowdown period with an average growth rate of 5% per year from 2019 to 2030. In the 2030s, China's growth rate will be 3% per year. In addition to this base scenario, I compute a pessimistic scenario in which China's average growth rate is 8.3% in the 2010s, 2.5% in the 2020s, and 2% in the 2030s. In the long run, this scenario is similar to one with 7% in the 2010s, 4% in the 2020s, and 2% in the 2030s. Since the rates estimated above are real growth rates in constant prices, they must be adjusted to the appreciation of the Chinese currency against the U.S. dollar, which is mainly driven by the Balassa-Samuelson effect. Based on Xiao (2010), Tyers and Zhang (2010), and Hawksworth and Cookson (2008), I expect that the Chinese yuan will strengthen against the U.S. dollar by 2% a year during the high-growth period, 3% a year during the moderate-growth period, and 1.5% a year during the lower-growth period.

For the sake of simplicity, I only compute the base scenario for the GDP of the United States, Japan, and India. The projected growth rate of the United States is averaged at 2.4% annually in the 2010s, 3% in the 2020s, and 2.7% in the 2030s. As a highly advanced economy, the United States is unlikely to grow by more than 3% a year for several decades. By comparison, the U.S. economy expanded 2.7% a year in the three decades from 1980 to 2010. Having a liberal immigration policy and enough space and resources to add 100 million more people to its current

Table 1. GDP Projections, 2010–2040

	GDP (Trillion U.S. Dollars)			
	2010	2020	2030	2040
China (base)	5.9	16.5	36.2	56.5
China (pessimistic)	5.9	16.0	27.5	38.9
United States	14.6	18.5	24.9	32.5
India	1.7	3.9	9.7	23.2
Japan	5.5	6.4	7.0	7.4

population of 300 million by the mid-21st century, the United States will have the youngest workforce among the great powers (Haas, 2007; Kotkin, 2010). If it continues to maintain a condition conducive to innovation as it has in the past, America is well positioned to have the most productive workforce among the great powers of the mid-century, and to grow at a rate higher than 2.5% per year in the decades to come.

Still underdeveloped economically, India has ample room for growth. Having learned from the experiences of the Asian Tigers and especially China, India has embarked on a high-growth course since the early 2000s. Although it may not be able to replicate the Chinese record, India has a great chance to grow by 7–8% a year in the next three decades. In our base scenario, India is expected to grow 8% a year in the period 2010–2030 and 7% a year in the 2030s, while its currency will rise 0.5% a year in the 2010s, 1.5% a year in the 2020s, and 2% a year in the 2030s.

Japan will have the oldest workforce and the lowest growth rates among the four powers. If Japan will not radically change its immigration policy, its population is estimated to decrease by 25% from 128 million in 2005 to 95 million by 2050 (Fujimura, 2007). In our base scenario, Japan is projected to grow 1.5% per year on average in the 2010s, 1% per year in the 2020s, and 0.5% per year in the 2030s. By comparison, the growth rate of the Japanese economy in the “lost decades” from 1991 to 2010 was 1.03%. For the sake of simplicity, no currency adjustment is added to Japan’s rate. The projected GDPs from 2010 to 2040 of the four major powers are presented in Table 1 and Figure 1.

The high-tech GDP of these countries is calculated by multiplying their projected GDP by the projected share of their knowledge- and technology-intensive (KTI) sector in the GDP. Data about the KTI sector are far less reliable than those about GDP. For example, the *Science and Engineering Indicators 2010* (SEI; National Science Board, 2010) reports that China’s output of KTI industries as a share of GDP rose from 19.91% in 1995 to 23.29% in 2007. In the *Science and Engineering Indicators 2012* (National Science Board, 2012), the same figures are given as 17.55 and 18.88%, respectively. The differences resulted from periodic revisions by the data provider, IHS Global Insight, using more detailed Chinese National Bureau of Statistics data.⁷ Because the purpose of our prediction is to see whether China will have a chance to surpass the United States and whether the United States will have a chance to continue staying ahead of China in terms of high-tech GDP, I will take the SEI 2010 data as an optimistic scenario for China. This scenario projects

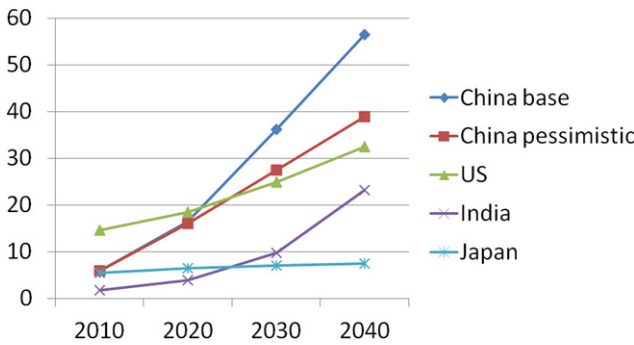


Figure 1. GDP projections of four major Indo-Pacific powers, 2010–2040

Table 2. Value Added of Knowledge-Intensive and High-Technology Industries as a Share of GDP, 2010–2040

	KTI Share of GDP (%)			
	2010	2020	2030	2040
China (optimistic)	24	27	30	33
China (base)	20	21	23	25
United States	40	43	47	51
India	19	21	23	25
Japan	30	31	32	32

the share of KTI in China’s economy to be 33% in 2040, two decades after the end of its high-growth period. This figure is basically similar to those of Taiwan and South Korea two decades after their high-growth phase. In 2010, the share of KTI in Taiwan’s economy was 31.8%, and that of Korea was 29% (National Science Board, 2012, Appendix Tables 6-1 and 6-2). For all the four major powers, I assume that the trends of the last 15 years will continue into the future and I will take this as a base scenario.⁸ The value added of the KTI industries as a share of GDP exhibits a steady growing trend in the United States, China, and India in the last two decades. In Japan, however, it flattens after growing steadily until 2003 (National Science Board, 2010, Figure 6-2, Appendix Table 6-2, pp. 6–10, 6–11; National Science Board, 2012, Appendix Tables 6-1 and 6-2). Table 2 projects these shares and their trends into the future. The high-tech GDP projections of the four major powers are presented in Table 3. Table 4 and Figures 2–5 give a sense of the balance of hard power in Asia for the next three decades.

These projections suggest that even in a pessimistic scenario, China will surpass the United States as the world’s largest economy in the 2020s. There is a chance that China’s hard power will overtake that of the United States during the 2030s. But if China’s economy encounters severe difficulties or if China fails to boost its high-tech sector to an extent similar to that of Taiwan and South Korea at a similar level of development, it will never catch up to the United

Table 3. High-Tech GDP Projections, 2010–2040

	High-Tech GDP (Trillion U.S. Dollars)			
	2010	2020	2030	2040
China (optimistic)	1.4	4.5	10.9	18.6
China (base)	1.2	3.5	8.3	14.1
China (pessimistic)	1.2	3.4	6.3	9.7
United States	5.8	8.0	11.7	16.6
India	0.3	0.8	2.2	5.8
Japan	1.7	2.0	2.2	2.4

Table 4. Balance of Hard Power, 2010–2040

	Percentage of the Largest (%)				
	2010	2020	2030	2040	2040
China (optimistic)	24	56	93	n.a.	100
China (base)	21	44	71	85	n.a.
China (pessimistic)	21	43	54	58	n.a.
United States	100	100	100	100	89
India	5	10	19	35	31
Japan	29	25	19	14	13
Largest power	United States	United States	United States	United States	China

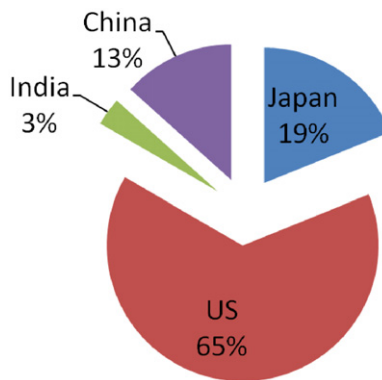


Figure 2. The balance of power among four major Indo-Pacific powers in 2010

States in terms of hard power. Nevertheless, starting from the 2020s, China will likely have a sufficient amount of high-tech wealth to substantially challenge U.S. hard power in Asia. The 2030s and 2040s will likely be the apex of an intense competition between China and the United States for primacy in Asia as well as globally.

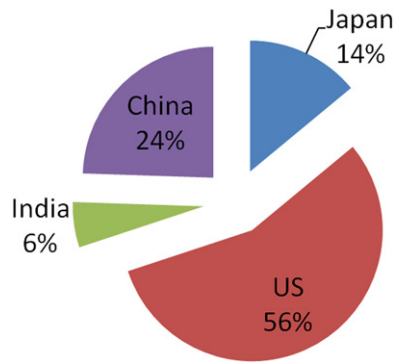


Figure 3. The balance of power among four major Indo-Pacific powers in 2020

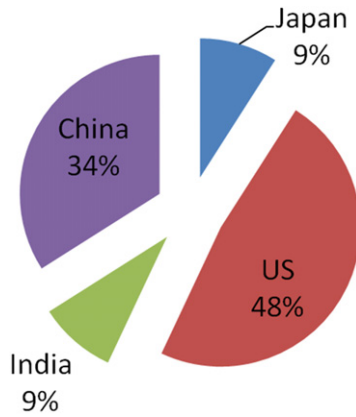


Figure 4. The balance of power among four major Indo-Pacific powers in 2030

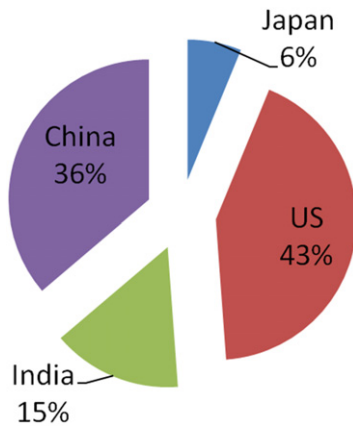


Figure 5. The balance of power among four major Indo-Pacific powers in 2040

Conclusion

The rise of Chinese power would not be possible without a rapid, multidecade growth of the Chinese economy. This Chinese growth success seems to share with the rapid modernization of the Asian Tigers before it a similar set of “secrets”—integration into a liberal world economic order, the directional role of the state, and an emphasis on investment and technology. What sets China apart from the others is its record-high and record-long growth, which has averaged 10% a year for more than three decades now. China’s economies of huge scale and the fortunate timing of its high-growth period may have contributed to this record. But one distinctive feature of Chinese growth is a cult of investment. Much of Chinese growth is attributable to the huge amount of capital poured into the economy for decades, and most of China’s ability to maintain a high investment rate for a very long period of time is attributable to its ability to maintain a high savings rate for an equally long period of time. Unexpectedly, China’s one-child policy may be another major contributor to its growth superiority, as this draconian policy has driven a large portion of the Chinese people to save far more than they would have without it. China’s growth has been built on a large set of imbalances—demographic, environmental, economic, social, and political. Chinese leaders have been long aware of these imbalances and tried to redress them. However, large sections of the ruling elites, particularly the local governments and the SOEs, have vested interests in those imbalances, while some of the imbalances themselves are crucial for the solution of China’s more immediate needs. As a result, China is trapped in its imbalances despite the political will to redress them.

Contrary to some widespread beliefs, China’s unbalanced growth path is unlikely to lead to the collapse of the Chinese economy in the near future. Instead, it may even shorten China’s rise to economic primacy. If China continues its current investment-driven and export-led path, it can hardly avoid a long period of stagnation in the future. However, none of the possible triggers of recession is likely to immensely derail China’s growth in the near future. The immediate cause of China’s “lost decades” is likely to be a debt crisis precipitated by the loss of the demographic dividend in a rapidly aging population, which no longer is able to save massively to keep the banking system afloat. As this is likely to become acute in the 2030s, China will likely enter a period of stagnation in two (but not one or a half) decades from now. In the meantime, China will still have a great chance to overtake the United States as the world’s largest economy.

Notwithstanding its likely stagnation from the 2030s onward, China will have both the will and the wherewithal to seriously challenge U.S. preeminence in Asia. More than the Soviet Union before it, China will have some chance to catch up and even surpass the United States in high-tech GDP, an indicator of aggregate hard power. An alternative world order centered on China may emerge alongside the U.S.-centered liberal order. But China will likely attach rather than separate its own solar system from the U.S.-led international system. It may try to gradually replace the United States as the central provider of global public goods and in the process will gradually change the liberal nature of the system. In this contest for primacy, China will make its best effort to take over the command of the global commons and the global financial market from the United States. Once its aging society can no longer afford to save more, it may try to make a virtue of

necessity, turning itself into a market of last resort while its economy begins to stagnate.

If the base scenario of our analysis is the most likely one, the United States will maintain a slight edge over China in the competition for hard power and Beijing will never catch up to Washington. But if America fails to maintain an environment conducive to growth and innovation as it has in the past, and if China is as successful as Taiwan and South Korea were in boosting productivity, Beijing will have a great chance to surpass Washington in terms of hard power. In any case, the U.S.-China competition will be so close that complacency will be the biggest enemy of both protagonists.

Acknowledgments

I wish to thank Aileen Baviera, Donald Keyser, Steven Kim, Michael Lwin, Joseph Nye, Andrew Scobell, Bill Wieninger, and two anonymous reviewers of *Asian Politics and Policy*, for their insightful and invaluable comments on earlier drafts of this article.

Notes

¹For a brief but incisive analysis of the “rising China” discourse, see Chestnut and Johnston (2009). For a critical summary of the recently revived debate over U.S. decline and the future of American primacy, see Edelman (2010). For a review of this debate in relation to the rise of China, in the United States and China, see Beckley (2011). For a report of the debate in Australia over the possible passing of primacy from the United States to China, see Thayer (2011).

²Relative power (the distribution or balance of power among actors) is different from relational power (the power of one actor over another in their relationship). As James Coleman (1990, p. 133) has noted, the former is a property of the actor in the system, whereas the latter is a property of the relation between two actors.

³If not otherwise remarked, data on GDP and GDP growth rates in this study are compiled from the World Bank’s World Development Indicators.

⁴There has been a significant shift of resources back to the SOEs in the second, “state capitalism” phase of China’s reform. However, the overall shift has created a large sector of joint ventures and private enterprises, both domestic and foreign invested.

⁵As exemplified by the case of Lenovo, part of FDI to China actually originates from China itself. However, the fact that many dynamic entrepreneurs from the mainland have to invest in China under the name of Hong Kong testifies for China’s state capitalism (Huang, 2008).

⁶Strategic Asia is defined as the area most critical to the contest for regional primacy in Asia. This area stretches from Siberia in the north to Australia in the south and from Japan in the east to Saudi Arabia in the west.

⁷I thank Rolf Lehming, Director of the Science and Engineering Indicators Program, for his clarifications (personal communication, February 3, 2012).

⁸This is not to say that the countries will most likely continue these trends. The continuation assumption is for the sake of simplicity and to provide a base scenario only. Other possible scenarios, optimistic or pessimistic, can be imagined starting from the base scenario.

References

- Abramovitz, Moses. (1956). Resource and output trends in the United States since 1870. *American Economic Review*, 46(2), 5–23.
- Aglietta, Michel. (2011, September 8). La Chine n’a pas fini de nous surprendre en positif. *Le Nouvel Economiste*, pp. 12–13. Retrieved from <http://www.lenouveleconomiste.fr/michel-aglietta-cepii-la-chine-na-pas-fini-de-nous-surprendre-en-positif-11889/>.
- APCO Worldwide. (2010, December 10). *China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years*. Retrieved from http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

- Beckley, Michael. (2011). China's century? Why America's edge will endure. *International Security*, 36(3), 41–78.
- Beim, David. (2011). *The future of chinese growth*. Retrieved from http://newamerica.net/publications/policy/the_future_of_chinese_growth.
- Brandt, Loren, Hsieh, Chant-tai, & Zhu, Xiaodong. (2008). Growth and structural transformation in China. In Loren Brandt & Thomas G. Rawski (Eds.), *China's great economic transformation* (pp. 683–728). Cambridge: Cambridge University Press.
- Brødsgaard, Kjeld Erik. (2008). Foreign direct investment in China: Origin, distribution, and impact on the economy. In Verner Worm (Ed.), *China: Business opportunities in a globalizing economy* (pp. 43–61). Copenhagen: Copenhagen Business School Press.
- Cai, Fang. (2010). Demographic transition, demographic dividend, and Lewis turning point in China. *China Economic Journal*, 3(2), 107–119.
- Cai, Fang, & Wang, Dewen. (2010). Demographic transition and economic growth in China. *Economic Systems*, 34, 218–236.
- Cai, Fang, & Wang, Meiyun. (2011). Urbanisation with Chinese characteristics. In Ross Garnaut, Jane Golley, & Ligang Song (Eds.), *China: The next twenty years of reform and development* (pp. 319–340). Canberra, Australia: ANU E Press. Retrieved from http://epress.anu.edu.au/titles/china-update-series/china_20_citation/pdf-download.
- Chamon, Marcos, Liu, Kai, & Prasad, Eswar. (2011). *Income uncertainty and household savings in China*. NBER Working Paper 16565.
- Chang, Gordon. (2011, December 29). The coming collapse of China: 2012 edition. *Foreign Policy*. Retrieved from http://www.foreignpolicy.com/articles/2011/12/29/the_coming_collapse_of_china_2012_edition.
- Chestnut, Sheena, & Johnston, Alastair Iain. (2009). Is China rising? In Eva Paus, Penelop Prime, & Jon Western (Eds.), *Global giant: Is China changing the rules of the game?* (pp. 237–259). New York: Palgrave Macmillan.
- Coleman, James. (1990). *Foundations of social theory*. Cambridge, MA: Harvard University Press.
- Dowding, Keith. (2008). Power, capability and ableness: The fallacy of the vehicle fallacy. *Contemporary Political Theory*, 7, 238–258.
- Eberstadt, Nicholas. (2009). Will China (continue to) rise? In Gary Schmitt (Ed.), *The Rise of China: Essays on the future competition* (pp. 131–154). New York: Encounter Books.
- Edelman, Eric. (2010). *Understanding America's contested primacy*. Washington, DC: Center for Strategic and Budgetary Assessments.
- Fan, C. Cindy. (2006). China's Eleventh Five-Year Plan (2006–2010): From “getting rich first” to “common prosperity.” *Eurasian Geography and Economics*, 47, 708–723.
- Fujimura, Naoko. (2007, September 17). *Japan's elderly population rises to record, government says*. Retrieved from http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aIzv9oPDe_4.
- Fukumoto, Tomoyuki, & Muto, Ichiro. (2011). *Rebalancing China's economic growth: Some insights from Japan's experience*. Bank of Japan Working Paper Series No. 11-E-5.
- Garnaut, Ross. (2010). The turning point period in China's economic development: A conceptual framework and new empirical evidence. In Ross Garnaut, Jane Golley, & Ligang Song (Eds.), *China: The next twenty years of reform and development* (pp. 19–37). Canberra, Australia: ANU E Press.
- Garnaut, Ross, & Huang, Yiping. (2006). Continued rapid growth and the turning point in China's development. In Ross Garnaut & Ligang Song (Eds.), *The turning point in China's economic development* (pp. 12–34). Canberra, Australia: ANU E Press.
- Garthoff, Raymond. (1951). The concept of the balance of power in Soviet policy-making. *World Politics*, 4(1), 85–111.
- Gilpin, Robert. (1981). *War and change in world politics*. Cambridge: Cambridge University Press.
- Gries, Peter Hays. (2004). *China's new nationalism: Pride, politics, and diplomacy*. Berkeley: University of California Press.
- Haas, Mark. (2007). A geriatric peace? The future of U.S. power in a world of aging population. *International Security*, 32(1), 112–147.
- Hawksworth, John, & Cookson, Gordon. (2008). *The world in 2050: Beyond the BRICs: A broader look at emerging market growth prospects*. London: PriceWaterhouseCooper.
- Howitt, Peter. (2004). Endogenous growth, productivity and economic policy: A progress report. *International Productivity Monitor*, 8, 3–15.
- Hu, Angang, & Men, Honghua. (2002). The rising of modern China: Comprehensive national power and grand strategy. *Strategy and Management* 3. English version retrieved from <http://www.irchina.org/en/pdf/hag.pdf>.
- Hu, Jintao. (2011, April 15). Toward common development and a harmonious Asia. Speech at the Boao Forum for Asia Annual Conference. Retrieved from <http://www.fmprc.gov.cn/eng/wjdt/zyjh/t816535.htm>.

- Huang, Yasheng. (2008). *Capitalism with Chinese characteristics: Entrepreneurship and the state*. Cambridge: Cambridge University Press.
- Hughes, Christopher R. (2006). *Chinese nationalism in the global era*. New York: Routledge.
- Hung, Juann H., & Qian, Rong. (2010). *Why is China's saving rate so high? A comparative study of cross-country panel data*. Congressional Budget Office, CBO Working Paper Series, No. 2010-07.
- Is the era of cheap Chinese labour over? (2010, July 16). *Economist*. Retrieved from http://www.economist.com/economics/by-invitation/questions/era_cheap_chinese_labour_over.
- Jacques, Martin. (2009). *When China rules the world: The rise of the Middle Kingdom and the end of the Western world*. London: Allen Lane.
- Johnston, Alastair Iain. (1995). *Cultural realism: Strategic culture and grand strategy in Chinese history*. Princeton, NJ: Princeton University Press.
- Johnston, Alastair Iain. (1996). Cultural realism and strategy in Maoist China. In Peter Katzenstein (Ed.), *The culture of national security* (216–268). New York: Columbia University Press.
- Kennedy, Paul. (1987). *The rise and fall of the great powers: Economic change and military conflict from 1500 to 2000*. New York: Random House.
- Kotkin, Joel. (2010). *The next hundred million: America in 2050*. New York: Penguin.
- KPMG China. (2011). *China's 12th Five-Year Plan: Overview*. Retrieved from <http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Overview-201104.pdf>.
- Kuijs, Louis. (2006). *How will China's saving-investment balance evolve?* World Bank Policy Research Working Paper No. 3958. Retrieved from <http://www.worldbank.org/research/2006/07/6887581/chinas-saving-investment-balance-evolve>.
- Lampton, David M. (2001). *Same bed, different dreams: Managing U.S.-China relations, 1989–2000*. Stanford, CA: Stanford University Press.
- Land transfers now major source of local governments' fiscal revenue: Report. (2010, December 29). *Global Times*. Retrieved from <http://www.globaltimes.cn/business/china-economy/2010-12/606958.html>.
- Lee, John. (2009). *Will China fail? The limits and contradictions of market socialism* (2nd ed.). St Leonards, Australia: Center for Independent Studies.
- Lewis, Arthur. (1972). Reflections on unlimited labour. In L. Di Marco (Ed.), *International economics and development* (pp. 75–96). New York: Academic Press.
- Lin, Ping, & Zhang, Jing A. (2008). R&D incentives, industrial structure and technology transfer in China. In Elspeth Thomson & Jon Sigurdson (Eds.), *China's science and technology sector and the forces of globalisation* (pp. 47–78). Singapore: World Scientific.
- Ma, Guonan, & Yi, Wang. (2010). *China's high saving rate: Myth and reality*. Bank for International Settlements. BIS Working Papers, No. 312.
- National Science Board. (2010). *Science and engineering indicators 2010*. Arlington, VA: National Science Foundation. Retrieved from <http://www.nsf.gov/statistics/seind10/>.
- National Science Board. (2012). *Science and engineering indicators 2012*. Arlington, VA: National Science Foundation.
- Nye, Joseph. (1990). *Bound to lead: The changing nature of American power*. New York: Basic Books.
- Nye, Joseph. (2011). *The future of power*. New York: PublicAffairs.
- Perkins, Dwight. (2007). *The challenges of China's growth*. Washington, DC: The AEI Press.
- Perkins, Dwight H., & Rawski, Thomas G. (2008). Forecasting China's economic growth to 2025. In Loren Brandt & Thomas G. Rawski (Eds.), *China's great economic transformation* (pp. 829–886). Cambridge: Cambridge University Press.
- Perkins, Dwight H., & Sabin, Lora. (2001). Productivity and structural change. In Li-min Hsueh, Chenkuo Hsu, & Dwight H. Perkins (Ed.), *Industrialization and the state: The changing role of the Taiwan government in the economy, 1945–1998* (151–174). Cambridge, MA: Harvard University Press.
- Pillsbury, Michael. (2000). *China debates the future security environment*. Washington, DC: National Defense University Press.
- Reuters. (2011, May 5). *China population turning-point to spur inflation: State economist*. Retrieved from <http://www.reuters.com/article/2011/05/05/us-economy-china-population-idUSTRE7440SA20110505>.
- Roach, Stephen. (2011). China's 12th Five-Year Plan: Strategy vs. tactics. Retrieved from http://www.morganstanley.com/im/emailers/inst/pdf/China_12th_Five_Year_Plan.pdf.
- Russett, Bruce M. (1985). The mysterious case of vanishing hegemony; or, is Mark Twain really dead? *International Organization*, 39(2), 207–231.
- Scobell, Andrew. (2003). *China's use of military force: Beyond the Great Wall and the Long March*. Cambridge: Cambridge University Press.
- Sender, Henny, & Anderlini, Jamil. (2010, August 5). Bank boss adds to concerns over speed of China's economic growth. *Financial Times*. Retrieved from <http://www.ft.com/cms/s/0/b8c31a8a-404a-11df-8d23-00144feabd0.html#axzz1hcvt1M1>.

- Shih, Victor. (2011, June 28). China's local debt problem is bigger than it looks. *Beyondbrics. Blog site of the Financial Times*. Retrieved from <http://blogs.ft.com/beyond-brics/2011/06/28/guest-post-chinas-local-debt-problem-is-bigger-than-it-looks/#axzz1hgkDnNUC>.
- Solow, Robert M. (1957). Technical change and aggregate production function. *Review of Economics and Statistics*, 39, 312–320.
- Tellis, Ashley, Bially, Janice, Layne, Christopher, & McPherson, Melissa, (2000). *Measuring national power in the postindustrial age*. Santa Monica, CA: RAND.
- Thayer, Carlyle. (2011). China's rise and the passing of U.S. primacy: Australia debates its future. *Asia Policy*, 12, 20–26.
- Thucydides. *History of the Peloponnesian War*. Richard Cawler (Trans.). New York: Dutton and Co., 1910.
- Treverton, Gregory F., & Jones, Seth. (2005). *Measuring national power*. Santa Monica, CA: RAND.
- Tyers, Rod, & Zhang, Ying. (2010). The real exchange rate and the renminbi. In Ross Garnaut, Jane Golley, & Ligang Song (Eds.), *China: The next twenty years of reform and development* (pp. 163–192). Canberra, Australia: ANU E Press.
- Wei, Shang-Jin, & Zhang, Xiaobo. (2009). *The competitive saving motive: Evidence from rising sex ratios and saving rates in China*. National Bureau of Economic Research, NBER Working Paper No. 15093.
- Wen, Jiabao. (2006, March 5). *Report on the work of the government*. Delivered at the Fourth Session of the Tenth National People's Congress. Retrieved from <http://english.eastday.com/eastday/englishedition/node20665/node20668/node22810/node121651/node121652/userobject1ai1917036.html>.
- White, Hugh. (2010). Power shift: Australia's future between Washington and Beijing. *Quarterly Essay*, 39(3), 1–74.
- Wolf, Charles, Yeh, K. C., Zycher, Benjamin, Eberstadt, Nicholas, & Lee, Sung-Ho. (2003). *Fault lines in China's economic terrain*. Santa Monica, CA: RAND.
- World Bank. *World development indicators*. Retrieved from <http://data.worldbank.org/data-catalog/world-development-indicators>.
- Xiao, Geng. (2010). Exchange rate policy and macroeconomic adjustment. In Ross Garnaut, Jane Golley, & Ligang Song (Eds.), *China: The next twenty years of reform and development* (pp. 153–162). Canberra, Australia: ANU E Press.
- Yang, Dennis Tao, Zhang, Junsen, & Zhou, Shaojie. (2011). *Why are saving rates so high in China?* National Bureau of Economic Research, NBER Working Paper No. 16771.
- Zhang, Xiaobo, Yang, Jin, & Wang, Shenglin. (2010). *China has reached the Lewis turning point*. IFPRI Discussion Paper 000977.
- Zhao, Huanxin. (2006, December 19). China names key industries for absolute state control. *China Daily*. Retrieved from http://www.chinadaily.com.cn/china/2006-12/19/content_762056.htm.
- Zhao, Suisheng. (2004). *A nation-state by construction: Dynamics of modern Chinese nationalism*. Stanford: Stanford University Press.